I. Introduction

This training manual has been prepared to provide guidance and instruction to inspectors involved in the construction of hot mix asphalt (HMA) pavements. The important tasks involved in this work are explained and proper procedures are described.

The material is designed for use in conjunction with an introductory class for those with limited experience in HMA paving construction. It may also serve as a refresher for more experienced inspectors.

This manual has been prepared with the intent that it may be used in three ways: as a text for a training class, as a self-training manual, and as a reference to be used in the field.

The text is arranged in a fashion to help the inspector first learn the various aspects of what is involved in an HMA paving operation and then become familiar with the duties that are a part of the HMA pavement grade inspection responsibilities. This manual is not intended to cover every aspect of HMA paving. Specific operations such as aggregates, mix design, plant production, sampling & testing, etc. are covered in other training courses available through the Iowa Department of Transportation or HMA industry.

At the beginning of each section, references (shown in italics) are given to the Iowa Department of Transportation Standard Specification, Materials Instructional Memorandum (IM), Standard Road Plan, or Construction Manual section when they are applicable. These references will enable the inspector to refer to those documents for more detailed information. The actual documents are not included in this manual because they are continually being updated. Different versions may be applicable to different projects being constructed in the same construction season. The project letting date will determine which Specifications, Materials IM's, Road Standards, or other contract documents are applicable.

Please note that alternative Quality Control / Quality Assurance (QC/QA) procedures have been developed that will be applied to selected HMA projects during the 2009 and 2010 construction seasons. The QC/QA specification requirements for these projects will differ from projects bid under the standard specifications. The Appendix (Chapter 10 of this manual) contains additional background information and a comparison of QC/QA requirements under the standard specifications versus the developmental specifications applied to the pilot projects.

A glossary of common asphalt-related terminology is also included in the Appendix.

This manual is arranged to provide space for photographs and other illustrations adjacent to the text. The space may also be used to make notes for future reference.

What is hot mix asphalt?

- Asphalt binder, aggregate, and air blended together in precise proportions to produce a mix with the desired qualities.

- There are many different types of asphalt binder and aggregates, so it is possible to combine them to make different hot mix asphalt pavements.

Why use hot mix asphalt?

- Existing pavement surfaces can be upgraded relatively quickly with the least inconvenience to the traveling public.

- Maintenance repairs and surface corrections can be made quicker and cheaper than PCC pavements.

- Flexible pavement is not likely to suffer damage related to gradual settlements and movements.

- Other benefits include increased smoothness and higher contrast with pavement markings versus PCC pavements.